

## REMARKS/ARGUMENTS

Claims 3, 4, 6-41 and 68-74 are pending herein. Claims 14-41 have been allowed. Claim 10 has been amended and new claim 74 has been added as supported by, for example, Fig. 8 of the present application. Claim 8 has been rewritten to properly depend from claim 10.

1. Claims 10-13 and 68-73 were rejected under §103 over Brunnée in view of Ogawa (USP 4,805,057) or Kohno or Kaida. To the extent that this rejection might be applied against the amended claims, it is respectfully traversed.

Fig. 8 of the present application shows one example of the claimed piezoelectric/electrostrictive (P/E) device. Pending independent claim 10 recites, among other things, a P/E device including a fixation section (22), thin plate sections (16a,16b) and a movable section (20). Pending claim 10 has been amended to clarify that an actuator section includes a pair of stacked type P/E elements (e.g., P/E elements 24a1 and 24a2) fixed on at least one of the thin plate sections (e.g., thin plate section 16a). Pending claim 10 has been further amended to clarify that one of the stacked type P/E elements (24a2) is disposed partially on the thin plate section (16a) and the movable section (20), and the other stacked type P/E element (24a1) is disposed partially on the thin plate section (16a) and the fixation section (22). The applied prior art of record, discussed below, does not disclose or suggest the actuator section structure now recited in pending independent claim 10.

Applicants discovered that substantially greater displacement of the movable section is advantageously obtained from forming a pair of stacked type P/E elements on at least one of the thin plate sections, with one of the stacked type P/E elements positioned on portions of the thin plate and movable sections and the other of the stacked type P/E elements positioned

on portions of the thin plate and fixation sections. The arrangement of multiple stacked type P/E elements on a single thin plate provides excellent high speed response performance (see original specification page 34, line 15 -- page 35, line 4).

Fig. 3 of Brunnée shows that a single piezoelectric element (14,15) is formed on a carrier plate (27,28). Ogawa '057, Kohno and Kaida each disclose multi-layered piezoelectric elements. As discussed above, pending independent claim 10 now recites that "a pair of stacked type piezoelectric/electrostrictive elements [is] fixed on at least one of said thin plate sections . . ." It is clear that even if Brunnée were modified to include the piezoelectric elements shown in any one of Ogawa '057, Kohno or Kaida, as asserted in the Office Action, the resultant structure would still include only *a single piezoelectric element* on each carrier plate (27,28), and not *a pair of stacked type P/E elements* on at least one thin plate section, as claimed. This rejection should be withdrawn for this reason alone.

Moreover, Brunnée clearly teaches that piezoelectric elements (14,15) should be formed only on portions of the carrier plates (27,28) (e.g., see Brunnée's Fig. 3). Pending independent claim 10, in contrast to Brunnée's teachings, now recites that "one of said stacked type piezoelectric/electrostrictive elements is disposed partially on said thin plate section and said movable section, and the other of said stacked type piezoelectric/electrostrictive elements is disposed partially on said thin plate section and said fixation section." Even if Brunnée's piezoelectric elements (14,15) were replaced with any one of the piezoelectric elements shown in Ogawa '057, Kohno or Kaida, as alleged in the Office Action, there would still be no disclosure or suggestion that the piezoelectric elements would be positioned on any portion of Brunnée's actuator device other than only on carrier plates (27,28), as is clearly shown in Figs. 3, 5 and 7 of Brunnée. There certainly would be no suggestion that any portion of the sole piezoelectric element (if Brunnée were modified as

alleged in the Office Action) would be disposed partially on the thin plate section and the movable section, or disposed partially on the thin plate section and the fixation section, let alone that one piezoelectric element would be disposed partially on the thin plate section and the movable section, and another piezoelectric element would be disposed partially on the thin plate section and the fixation section, as claimed.

In view of all of the foregoing, reconsideration and withdrawal of the §103 rejection are respectfully requested.

New independent claim 74 has been added and recites, among other things, that at least one stacked type P/E element is disposed partially on at least one thin plate section and a fixation section, or is disposed partially on at least one thin plate section and a movable section. As discussed above, even if the piezoelectric elements disclosed in any one of Ogawa '057, Kohno or Kaida were substituted for Brunnée's piezoelectric elements (14,15), there would still be no disclosure or suggestion that the substituted piezoelectric elements would be positioned on any portion of Brunnée's actuator device other than only on the carrier plates. Accordingly, new claim 74 is also patentably distinct from the PTO's asserted combination of Brunnée and Ogawa '057 or Kohno or Kaida.

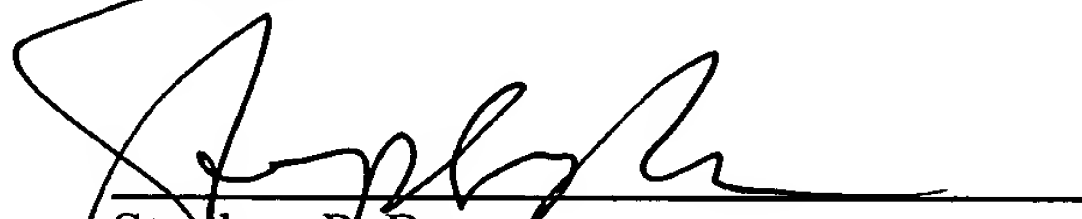
2. Claims 3, 4 and 6-9 were rejected under §103 over Brunnée in view of Kohno and combined with Gravley or Um. Applicants respectfully submit that the arguments submitted above distinguish pending claim 10 from the PTO's asserted combination of Brunnée and Kohno. Since Gravley and Um do not overcome the deficiencies of Brunnée in view of Kohno (as discussed above), and since claim 8 has been amended to depend directly from pending claim 10, claims 3, 4 and 6-9 are also believed to be allowable over the applied prior art of record.

**In the Amendment filed August 15, 2003, the PTO was requested to confirm receipt and consideration of the Information Disclosure Statements filed on November 27, 2001; August 12, 2002; and December 12, 2002. The PTO is again requested to confirm receipt and consideration of these Information Disclosure Statements (courtesy copies are attached hereto).**

If the Examiner believes that contact with Applicants' attorney would be advantageous toward the disposition of this case, the Examiner is herein requested to call Applicants' attorney at the phone number noted below.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

  
\_\_\_\_\_  
Stephen P. Burr  
Reg. No. 32,970

April 8, 2004

Date

SPB:SWC:jms

Attachment:

Courtesy copies of the Information Disclosure Statements filed November 27, 2001,  
August 12, 2002 and December 12, 2002

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Practitioner's Docket No.: 789\_048 NP

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of: Yukihiisa TAKEUCHI, Kazuyoshi SHIBATA and Masahiko NAMERIKAWA

Ser. No.: 09/672,069

Art Unit: 2834

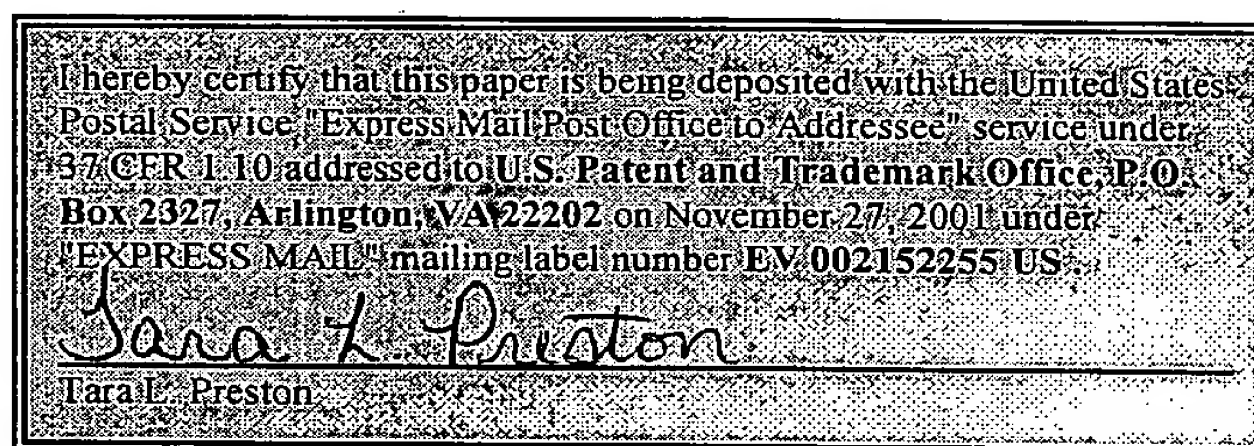
Filed: September 28, 2000

Examiner: Not Assigned

Conf. No.: 7280

For: PIEZOELECTRIC/ELECTROSTRICTIVE DEVICE AND METHOD OF MANUFACTURING SAME

Assistant Commissioner for Patents  
Washington, DC 20231



IDENTIFICATION OF COPENDING APPLICATIONS

Sir:

The attention of the Patent Office is drawn to the copending applications listed on the attached Form PTO-1449 which may contain technical subject matter related to that of the present invention.

Serial No(s).	Date Filed	Inventor(s)
09/642,861	8/21/2000	1) Yukihiisa Takeuchi 2) Tsutomu Nanataki 3) Masato Komazawa 4) Koji Kimura
09/643,163	8/21/2000	1) Yukihiisa Takeuchi 2) Tsutomu Nanataki 3) Masato Komazawa 4) Koji Kimura

Copies of each of the applications are attached. This identification is not to be construed as a waiver of secrecy as to the cited applications now or upon issuance of the present application

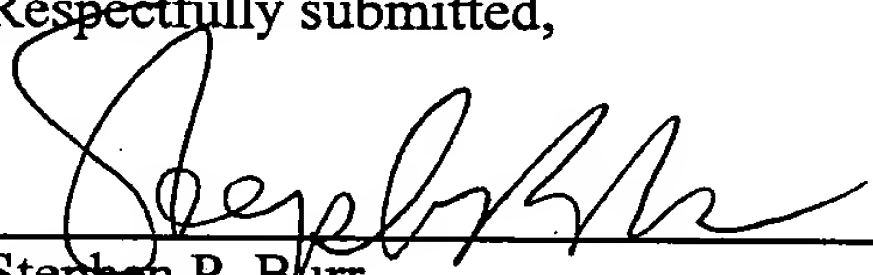
as a patent. The Examiner is respectfully requested to consider the cited applications and the art cited therein during examination of the present application.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

November 27, 2001

Date

  
\_\_\_\_\_  
Stephen P. Burr  
Reg. No. 32,970

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Form PTO 1449

US DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEINFORMATION DISCLOSURE  
STATEMENT BY APPLICANT

Atty Docket No.

789\_048 NP

Serial No.

09/672,069

Applicant

Yukihisa TAKEUCHI, Kazuyoshi SHIBATA and Masahiko  
NAMERIKAWA

Filing Date

September 28, 2000

Group

2834

## U.S. PATENT DOCUMENTS

Exam. Initial		Document Number	Date	Name	Class	Sub Class	Filing Date

## U.S. COPENDING PATENT APPLICATIONS

Exam. Initial		Document Number	Filing Date	Name	Class	Sub Class
	AP	09/642,861	8/21/2000	Takeuchi et al.		
	AQ	09/643,163	8/21/2000	Takeuchi et al.		

## FOREIGN PATENT DOCUMENTS

		Document Number	Date	Country	Class	Sub Class	Translation	Abstract

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages Etc.)

Examiner	Date Considered	

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.





Practitioner's Docket No.: 789\_048 NP

PATENT

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Yukihisa TAKEUCHI, Kazuyoshi SHIBATA and  
Masahiko NAMERIKAWA

Ser. No.: 09/672,069

Art Unit: 2834

Filed: September 28, 2000

Examiner: Budd, M.

Confirmation No.: 7280

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MANUFACTURING SAME

Assistant Commissioner for Patents  
Washington, DC 20231

I hereby certify that this paper is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 addressed to Assistant Commissioner for Patents, Washington, D.C. 20231 on August 12, 2002 under "EXPRESS MAIL" mailing label number EE795239353US.

Elizabeth A. VanAntwerp

INFORMATION DISCLOSURE STATEMENT

Sir:

Pursuant to 37 C.F.R. §1.56, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached Form PTO-1449. Copies of each of the references listed on Form PTO-1449 are attached.

The above information is presented so that the Patent and Trademark Office may, in the first instance, determine any materiality thereof to the claimed invention. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that these references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,

August 12, 2002

Date

Stephen P. Burr  
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Form PTO-1449 US DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE <div style="text-align: center; margin-top: 10px;"> <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i> </div>			<div style="border: 1px solid black; border-radius: 50%; width: 100px; height: 100px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-size: 0.8em;">OFFICE OF THE PATENT EXAMINER</div> <div style="text-align: center;"> <div style="font-size: 1.5em; font-weight: bold;">O T P E</div> <div style="font-size: 0.8em;">APR 08 2004</div> </div> </div>	
<i>Complete if Known</i>				
Application Number			09/672,069	
Filing Date			September 28, 2000	
First Named Inventor			Yukihisa TAKEUCHI	
Art Unit			2834	
Examiner Name			Budd, M.	
Confirmation No.			7280	
Attorney Docket No.			789_048 NP	
Sheet	1	of	1	

### U.S. PATENT DOCUMENTS

Exam. Initial		Document Number	Date	Name	Class	Sub Class	Filing Date
	AX	5,049,775	9/17/1991	Smits			
	AY	4,523,120	6/11/1985	Assard et al.			

### U.S. COPENING APPLICATIONS

Exam. Initial		Application Number	Our Docket No.	Filing Date	Inventor Name	Class	Sub Class

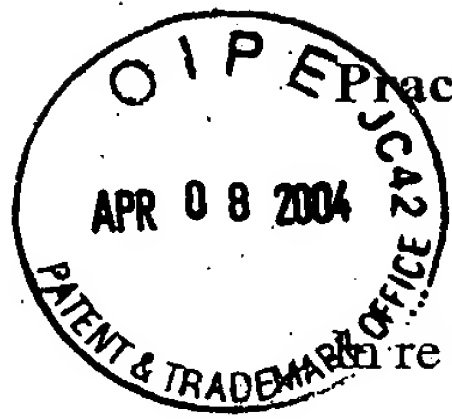
### FOREIGN PATENT DOCUMENTS

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### OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages etc.)


Examiner:		Date Considered:	
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Practitioner's Docket No.: 789\_048 NP

**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

re the application of:

Yukihisa TAKEUCHI, Kazuyoshi SHIBATA and Masahiko NAMERIKAWA

Ser. No.: 09/672,069

Art Unit: 2834

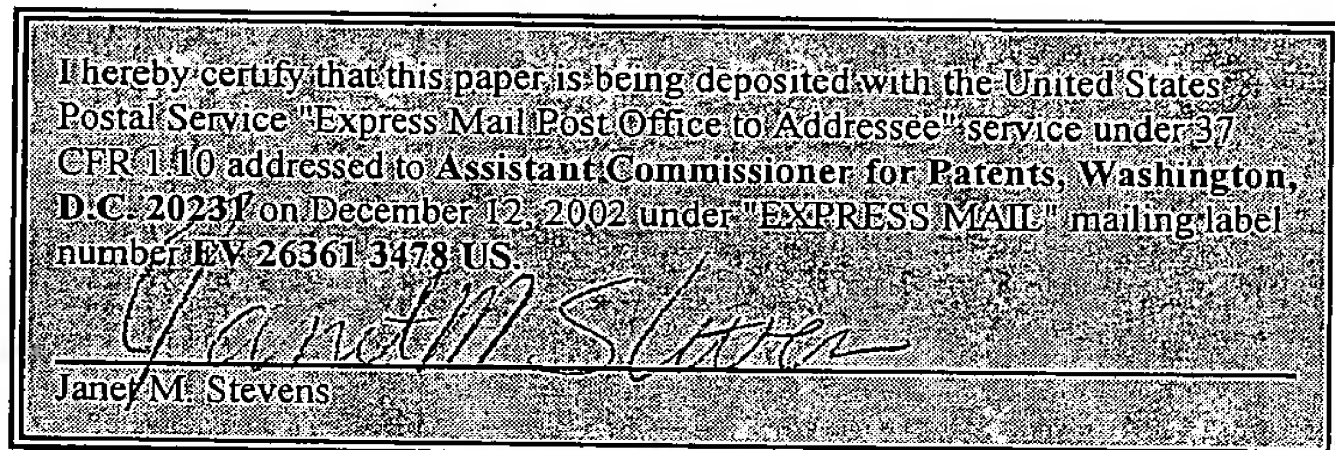
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The Commissioner is hereby authorized to charge any additional fees associated with this communication or credit any overpayment to Deposit Account No. 50-1446.

Respectfully submitted,



Kevin C. Brown  
Reg. No. 32,402

December 12, 2002

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KCB:jms

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Form PTO-1449

US DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICE**INFORMATION DISCLOSURE  
STATEMENT BY APPLICANT**

(use as many sheets as necessary)

Sheet

1

of

1

*Complete if Known*

Application Number

09/672,069

Filing Date

September 28, 2000

First Named Inventor

Yukihisa TAKEUCHI

Art Unit

2834

Examiner Name

Budd, M.

Confirmation No.

7280

Attorney Docket No.

789\_048 NP

**U.S. PATENT DOCUMENTS**

Exam. Initial		Document Number	Date	Name	Our Docket No.	Class	Sub Class	Filing Date
	AZ	5,828,157	10/1998	Miki et al.	N/A			

**U.S. COPENDING APPLICATIONS**

Exam. Initial		Application/ Publication Number	Filing/ Publication Date	Inventor Name	Our Docket No.	Class	Sub Class

**FOREIGN PATENT DOCUMENTS**

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